LFG-02

DISTRIBUTION PLANNING STANDARDS

Guidelines For Zones

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GUIDELINES

FOR ZONES

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1. Introduction

This document describes the criteria for making zones in distribution networks. This criteria has been prepared after thorough deliberations with the representatives of Operating Areas (DEDs).

Future Load Forecast reports shall be prepared zone wise.

Zone maps shall be prepared & updated by the each operating area and submit to PD/DS for review.

2. Definitions

An Area or stretch of land having a particular characteristics, purpose, or use, or subject to particular restrictions.

Technically zone is a geographical region in which the load of transmission substations can be transferred by distribution switching actions or by other arrangements (Permanently or temporarily).

In general a zone shall be bounded by physical obstacle, for instance a main road, mountains or a military areas etc.

3. Scope

This Distribution Planning Standard(DPS) provides the unified procedure, guidelines for making zones in all SEC Operating Areas for the purpose of Medium Voltage Network Planning, operation & maintenance and Load Fore casting.

4. Purpose of Zones:

The zones are framed for the following benefits,

4.1. To ease in System / Network improvement process.

- With the formation of zones, the distribution system/network planning can be performed more easily as compared to plan for the whole area.
- Optimization of network KPIs.
- Reduction of losses.

The above parameters can be done easily by switching the normal open points(NOP) within the zone.

4.2. Easy & Smooth operation & maintenance.

Within zone, the operation of the network shall be more smooth because , in case of fault occurrence or the operation people shall require to shift the load or NOP then it shall be within limited area of zone. This will make the job easy and the contingencies can be met more effectively.

In other words, while handling the contingencies, as the limits of network operation are confined within the specified area(Bounded by Main Roads, Mountains & Military Areas) It will make the process of operation & maintenance more easy & speedily.

4.3. Preparation of Load Forecast reports.

The zone wise load forecast shall indicate the particular area's loading conditions, then it shall be easy to keep the zone in normal loading condition by transferring the load to other substation which shall be

present in same area or prepare a plan for new substation in case of nan availability of firm capacity.

4.4. To improve the System Reliability.

Zoning will make the system more simple and reliable. As discussed in section 4.2, the boundaries are identified, so that the distribution network/ system will be limited & no hard situations like crossing the roads, mountains & military areas will be faced. So that the operation & maintenance will be easy in zones to make the system more reliable as well as stable.

4.5. To ease in design of New Required Projects.

A planning engineer shall identify / check a particular area's (zone) loading positions (Either overloaded or under loaded). By zoning a planning engineer shall balance the load of network more easily for particular area by switching actions or by new proposal of Substation in case of deficiency of firm capacity for long time without any problem.

4.6. Balance loading of the distribution network.

By zones, a planning engineer shall be well aware that when, where & how he shall have to transfer the load from one substation to another. So by establishing zones, it shall be easy for planning engineer to do the job of transferring the load to balance system.

In case of non-availability of firm load within the zone, the load may be transferred to other nearby zone temporarily. And shall be transferred back again within the zone when the capacity is available.

5. Criteria of Zones

The criteria of zone is described as follow:

5.1. While making a zone, the existing network configuration will be considered & the all substations within the zone should be interlinked.

5.2. At least one Transmission Substation or one Main Distribution Substation should be present in a zone. The remote areas shall have exception to this. If there is a plan to cancel/remove the primary distribution substation in specific zone, the firm capacity should be cancelled & keep the load.

5.3. Municipality/ Baladia regulations & natural/ geographical conditions shall be considered for determining the zone boundary.

5.4. Every zone shall be supplied from more than one source from different BSPs if possible.

5.5. The load should preferably be transferred within the zone.

5.6. Zone may be determined in accordance with the nature of load (Holy places, Industrial city, Military areas, Dedicated substations & Housing schemes etc).

5.7. After 3 years zone may be revised if required with an exception that an adequate justification to make change.

5.8. Zone boundary limit will be maximum 10 kilometers around for 13.8 KV from the substation & maximum 30 kilometers around for 33 KV from the substation.